their elements. Thus, with the same elements, in the same proportions, nature produces the insoluble parietes of the cellular tissue and vessels; the starch which she collects as nutriment around the buds and embryos; or soluble dextrine which the sap carries from one part to another, according to the necessities of the plant. By the union of carbon with water, are likewise produced those saccharine substances frequently deposited in the organs of plants for special purposes. Twelve atoms of carbon with eleven of water, form the sugar of canes; the same quantity of carbon with fourteen atoms of water, constitute the sugar found in raisins. Hence, if we reflect on the connexion which exists between vegetable life and the various substances just enumerated, we can fully understand the importance of that wonderful function whereby plants decompose carbonic acid, and fix its carbon.

(To be concluded in our next.)

PARALYSIS FROM LEAD

IN WATER USED FOR DRINK.

TO DR. GEORGE GREGORY,

LICENTIATE OF THE ROYAL COLLEGE OF PHYSICIANS, LONDON,
&c. &c. &c.

MY DEAR SIR,—On referring to your excellent elementary work on the theory and practice of medicine, I find, under the chapter on palsy, the following observations:—

“The difficulties which we have to encounter in any inquiry into the pathology of paralysis, are increased, when the investigation is extended to those cases of general and partial palsy, which, being to all appearance unconnected with any derangement of structure or function in the encephalon, must be presumed to depend on the condition of the nerves themselves. That such cases do occur is unquestionable, and it must be left to future inquiries to determine in what manner these apparent inconsistencies are to be reconciled.”

Again, in some interesting cases, published by you in the sixteenth volume of the *Medical Repository*, p. 265, you remark.—“It was a never-failing source of surprise to myself and the other practitioner in attendance, to observe palsy so complete in the extremities of the body, without the presence of a single symptom that could authorize our looking to the head as the common source and origin of the complaint.”

It appears, also, in the same paper, that Dr. Powell had met with similar cases, and had endeavoured to show, that “certain paralytic affections, both partial and general, originate in a peculiar condition of the nerves alone; that they are independent of any morbid affection of the blood-vessels of the head; that they are produced in many instances by cold, and in some by sympathy with particular states of the stomach, or other distant local irritabilities.”

These remarks struck me very forcibly, as they precisely corresponded with my own experience. I had seen numerous examples of palsy, especially of the upper extremities, which I could not explain to my satisfaction, either by observation or by reasoning; and I had seen the same disease come

in more than one person from the same district. In these the loss of power had been preceded by long-continued neuralgic pain across the epigastric and umbilical regions. There did not appear to have been any primary affection of the brain or spinal medulla; their trades or employments threw no light on the disease; they lived in the country, and were mostly occupied in horticultural or agricultural pursuits. I therefore came to the conclusion, that the motor nerves of the arms were paralysed by the gastrodynia or intestinodynia, through the connexion of the ganglionic nerves with the brachial plexus. I was not, however, at all satisfied with such an explanation. The following facts will, I trust, throw far more light on the causes of the disease, and prove that the water we drink is always to be suspected when the symptoms cannot be fairly traced to cerebral, spinal, or any other obvious causes.

My attention was first attracted to this cause of paraplegia by Mr. Osborne, an intelligent chemist of this town, who requested me to inspect the results of an analysis he had made on some water, in which he had discovered a considerable quantity of lead. He stated that Mr. Weare, from the manner in which several members of a family were affected, suspected that the symptoms—intestinal pains, blueness of the gums, and loss of power in the limbs—might be occasioned in some way or another by saturnine poison. As they had not been exposed to the evaporation of paint or the fumes of lead, he conjectured that the water they were in the habit of drinking was impregnated with this poison, especially as the portion first pumped in the morning had remained in leaden pipes during the night.

From this opinion, he very judiciously determined to have the water that had rested on the lead submitted to analysis. The water, both in taste and appearance, seemed to be perfectly pure. The tests to which it was subjected, were the chromate of potass, the sulphuretted hydrogen, and the iodide of potassium, each of which precipitated a considerable quantity of lead, and at once explained the true exciting cause of the disease.

This fact I held to be of great importance; and it led me to conclude that very many of the cases of palsy I had met with and could not explain, might have been traced to a similar cause. I therefore decided on investigating the water in the very next case that presented itself to my notice. Within a fortnight I had an opportunity of doing so.

Mr. Shelly of Burley, in the New Forest, æt. 42, consulted me for intestinodynia with constipation. These symptoms had affected him from time to time for many weeks, and they were associated with atrophy and loss of muscular power of the upper limbs. He was an agriculturist, and had been in no way (that he knew) exposed to the deleterious effects of lead. The water used for domestic purposes was in appearance and taste good and pure. But he acknowledged that the first portion pumped out in the morning for use, had stood in a leaden part of the pump all the night. Of such portion I requested a quart bottle might be sent to Mr. Osborne, that it might be analysed. This gentleman submitted it to the re-agents before named, and each of them precipitated *very considerable quantities of lead!* The chromate of potass threw down a gamboge yellow precipitate, or

chromate of lead; the sulphuretted hydrogen, a black precipitate, or sulphuret of lead; the iodide of potassium, a lively yellow precipitate, or iodide of lead. By what affinity the lead was held in solution previously to the analysis, Mr. Osborne has not yet ascertained.

Here then is another case of palsy clearly traced to the poisonous qualities of lead held in solution in water. Mr. Shelly informs me that his father and brother, who lived near his present residence, both died of obstructed bowels, associated with palsy of the limbs. Is it not reasonable to infer, that their diseases were the results of the same cause that has occasioned his own? In order to ascertain whether other of the springs near the locality of Mr. Weare's patients acted in a similar manner on lead, several specimens of water that had been allowed to remain in lead pipes were tested, but no saturnine results were discovered. This fact is interesting, inasmuch as it shows that water in the same locality, and of the same taste and appearance, may possess very different qualities. Doubtless the water used by Mr. Shelly's family is sufficiently pure and wholesome, so long as it is not permitted to remain in leaden receptacles.

I do not mean, my dear Sir, by the above facts, to arrogate to myself the merit of having made any discovery in poisons or pathology. We can have no hesitation in telling a painter, affected with paralysis of the hands, that he owes his malady to the poisonous results of lead; but when one has no painter to deal with, and when there is no obvious cause that could in any way account for the disease, I think you will allow that a new and insidious way has been discovered, by which this poison might be, and doubtless frequently is, introduced into the system—a way which, in the absence of all apparent causes, has escaped observation, and been seldom suspected, and which might probably have explained very many cases hitherto attributed to the effects of cold, and to causes not to blame.

I have addressed this letter to you, because you have taken great interest in this very subject, and because I am well convinced that your professional zeal will soon prompt you to investigate, in the field of your own extended practice, the truth of my statement. Should it be confirmed by your own and the testimony of other medical men, I feel persuaded it will prove to be a fact of the highest importance in the treatment and prevention of a most serious and protracted disease.

I remain faithfully yours,
W. V. OKE, M.D.

Southampton, Sept. 9, 1841.

PROVINCIAL MEDICAL & SURGICAL JOURNAL.

SATURDAY, SEPTEMBER 18, 1841.

THE Council of the Provincial Medical Association has been supposed by some, who are not

acquainted with the difficulties necessarily connected with the management of the concerns of so extensive an institution, to be more numerous than is consistent with efficiency. The reasons by which the association has been guided in the appointment of additional members from time to time, are, however, sufficiently weighty, and when the circumstances which call for so numerous a body of responsible persons are properly understood, it will be found that much difficulty would be experienced in otherwise providing for the due performance of the duties which the council are called upon to fulfil.

Those who have a practical acquaintance with the management of any extensive institution well know, that without the closest attention to the concerns of the financial department, however promising the prospect may otherwise be, the apparent vigour of its growth will but contribute to and hasten an untimely decay, at the very period, perhaps, when its maturity seems established on a firm and lasting foundation. Neglect, in this particular, is almost invariably fatal, or, if otherwise, must necessarily cripple exertion and materially impede usefulness. Where the income is derived from annual subscriptions, it requires appropriate arrangements for the collecting of these, to ensure their being paid with anything like regularity. It has hence been an object with the association to have one or more responsible persons in every locality, where the number of members has been sufficiently great to render it desirable, through whom the officers might communicate with the members, and upon whom they might call for assistance, as well in this respect as in others connected with the general management of its affairs. A society like the Provincial Association, the influence of which is so extensive, and the members of which are so widely scattered, requires also a numerous council, in order, adequately, to represent the sentiments of members residing in different towns.

It might, possibly, suit the views of certain individuals to apply the system of centralization to this society, and by the collecting together of a few members from various parts whose leisure might allow of their appearing in London, or elsewhere, it is not improbable that these views might be promoted.

Such a council, however, could not represent the members of the association at large, as at present constituted. Those eminent individuals, who, from the length and extent of their professional services in public and private life, are deservedly looked up to by their professional brethren, and are best calculated to form an opinion of what is really for the benefit of the collective body, must